

SEQUENCE LISTING

<110> HYBRIGENICS

<120> SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications

<130> B4809A - JAZ

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<160> 156

<170> PatentIn Ver. 2.1

<210> 1

<211> 50

<212> PRT

<213> Hepatitis C virus

<400> 1

Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala Thr Arg Lys
1 5 10 15

Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys
20 25 30

Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly Tyr Pro Trp
35 40 45

Pro Leu

50

<210> 2

<211> 35

<212> PRT

<213> Hepatitis C virus

<400> 2

Gly Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg
1 5 10 15

Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala
20 25 30

Gly Cys Ala

35

<210> 3

<211> 77

<212> PRT

<213> Hepatitis C virus

<400> 3
Asn Thr Asn Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln
1 5 10 15

Ile Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly
20 25 30

Val Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg
35 40 45

Arg Gln Pro Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala
50 55 60

Gln Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly
65 70 75

<210> 4
<211> 37
<212> PRT
<213> Hepatitis C virus

<400> 4
Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr
1 5 10 15

Tyr Ser Trp Gly Ala Asn Asp Thr Asp Val Phe Val Leu Asn Asn Thr
20 25 30

Arg Pro Pro Leu Gly
35

<210> 5
<211> 150
<212> PRT
<213> Hepatitis C virus

<400> 5
Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys Pro Gly Ile
1 5 10 15

Tyr Arg Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp Ser
20 25 30

Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu
35 40 45

Thr Pro Ala Glu Thr Thr Val Arg Leu Arg Ala Tyr Met Asn Thr Pro
50 55 60

Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val Phe
65 70 75 80

Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln
85 90 95

Ser Gly Glu Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys

100	105	110
Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys Cys		
115	120	125
Leu Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu Tyr		
130	135	140
Arg Leu Gly Ala Val Gln		
145	150	

<210> 6
<211> 28
<212> PRT
<213> Hepatitis C virus

<400> 6
Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr
1 5 10 15

Tyr Ser Trp Gly Ala Asn Asp Thr Asp Val Phe Val
20 25

<210> 7
<211> 26
<212> PRT
<213> Hepatitis C virus

<400> 7
Pro Pro Arg Pro Cys Gly Ile Val Pro Ala Lys Ser Val Cys Gly Pro
1 5 10 15

Val Tyr Cys Phe Thr Pro Ser Pro Val Val
20 25

<210> 8
<211> 54
<212> PRT
<213> Hepatitis C virus

<400> 8
Cys Val Val Ile Val Gly Arg Ile Val Leu Ser Gly Lys Pro Ala Ile
1 5 10 15

Ile Pro Asp Arg Glu Val Leu Tyr Gln Glu Phe Asp Glu Met Glu Glu
20 25 30

Cys Ser Gln His Leu Pro Tyr Ile Glu Gln Gly Met Met Leu Ala Glu
35 40 45

Gln Phe Lys Gln Lys Ala
50

<210> 9
<211> 40
<212> PRT
<213> Hepatitis C virus

<400> 9
Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr
1 5 10 15
Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Leu
20 25 30
Pro Gln Asp Ala Val Ser Arg Thr
35 40

<210> 10
<211> 28
<212> PRT
<213> Hepatitis C virus

<400> 10
Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
1 5 10 15
Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala
20 25

<210> 11
<211> 27
<212> PRT
<213> Hepatitis C virus

<400> 11
Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg Pro
1 5 10 15
Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu
20 25

<210> 12
<211> 42
<212> PRT
<213> Hepatitis C virus

<400> 12
Leu Glu Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Asn
1 5 10 15
Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg
20 25 30
Leu Ile Val Phe Pro Asp Leu Gly Val Arg
35 40

<210> 13
<211> 28
<212> PRT
<213> Hepatitis C virus

<400> 13
Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala
1 5 10 15
Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val
20 25

<210> 14
<211> 33
<212> PRT
<213> Hepatitis C virus

<400> 14
Glu Arg Pro Tyr Cys Trp His Tyr Pro Pro Arg Pro Cys Gly Ile Val
1 5 10 15
Pro Ala Lys Ser Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro
20 25 30
Val

<210> 15
<211> 31
<212> PRT
<213> Hepatitis C virus

<400> 15
Pro Ser Pro Val Val Val Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr
1 5 10 15
Tyr Ser Trp Gly Ala Asn Asp Thr Asp Val Phe Val Leu Asn Asn
20 25 30

<210> 16
<211> 77
<212> PRT
<213> Hepatitis C virus

<400> 16
Ala Gly Ala Leu Val Ala Phe Lys Ile Met Ser Gly Glu Val Pro Ser
1 5 10 15
Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala
20 25 30
Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg His Val Gly
35 40 45

Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile Ala Phe Ala
 50 55 60

Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro
 65 70 75

<210> 17
 <211> 147
 <212> PRT
 <213> Hepatitis C virus

<400> 17
 Glu Val Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu Ala Thr Cys
 1 5 10 15

Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Thr Arg Thr
 20 25 30

Ile Ala Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr Asn Val Asp
 35 40 45

Gln Asp Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg Ser Leu Thr
 50 55 60

Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr Arg His Ala
 65 70 75 80

Asp Val Ile Pro Val Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
 85 90 95

Ser Pro Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu
 100 105 110

Leu Cys Pro Ala Gly His Ala Val Gly Leu Phe Arg Ala Ala Val Cys
 115 120 125

Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Asn Leu
 130 135 140

Gly Thr Thr
 145

<210> 18
 <211> 36
 <212> PRT
 <213> Hepatitis C virus

<400> 18
 Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu Cys
 1 5 10 15

Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp Asp Trp Ile
 20 25 30

Cys Glu Val Leu
 35

<210> 19
<211> 28
<212> PRT
<213> Hepatitis C virus

<400> 19
Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly
1 5 10 15
Thr Thr Asp Arg Ser Gly Ala Pro Thr Tyr Ser Trp
20 25

<210> 20
<211> 45
<212> PRT
<213> Hepatitis C virus

<400> 20
Pro Pro Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg Ala Arg
1 5 10 15
Leu Leu Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr Leu Phe
20 25 30
Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile
35 40 45

<210> 21
<211> 86
<212> PRT
<213> Hepatitis C virus

<400> 21
Thr Ala Phe Val Gly Ala Gly Leu Ala Gly Ala Ala Ile Gly Ser Val
1 5 10 15
Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly Ala Gly
20 25 30
Val Ala Gly Ala Leu Val Ala Phe Lys Ile Met Ser Gly Glu Val Pro
35 40 45
Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly
50 55 60
Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg His Val
65 70 75 80
Gly Pro Gly Glu Gly Ala
85

<210> 22
<211> 43

<212> PRT
<213> Hepatitis C virus

<400> 22
Gly Ile Val Pro Ala Lys Ser Val Cys Gly Pro Val Tyr Cys Phe Thr
1 5 10 15
Pro Ser Pro Val Val Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr
20 25 30
Tyr Ser Trp Gly Ala Asn Asp Thr Asp Val Phe
35 40

<210> 23
<211> 63
<212> PRT
<213> Hepatitis C virus

<400> 23
Val Leu Val Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala
1 5 10 15
Leu Val Ala Phe Lys Ile Met Ser Gly Glu Val Pro Ser Thr Glu Asp
20 25 30
Leu Val Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val
35 40 45
Gly Val Val Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly
50 55 60

<210> 24
<211> 29
<212> PRT
<213> Hepatitis C virus

<400> 24
Glu Arg Pro Tyr Cys Trp His Tyr Pro Pro Arg Pro Cys Gly Ile Val
1 5 10 15
Pro Ala Lys Ser Val Cys Gly Pro Val Tyr Cys Phe Thr
20 25

<210> 25
<211> 76
<212> PRT
<213> Hepatitis C virus

<400> 25
Arg Arg His Trp Thr Thr Gln Asp Cys Asn Cys Ser Ile Tyr Pro Gly
1 5 10 15
His Ile Thr Gly His Arg Met Ala Trp Asp Met Met Met Asn Trp Ser
20 25 30

Pro Thr Ala Ala Leu Val Val Ala Gln Leu Leu Arg Ile Pro Gln Ala
 35 40 45

Ile Met Asp Met Ile Ala Gly Ala His Trp Gly Val Leu Ala Gly Ile
 50 55 60

Ala Tyr Phe Ser Met Val Gly Asn Trp Ala Lys Val
 65 70 75

<210> 26

<211> 37

<212> PRT

<213> Hepatitis C virus

<400> 26

Ala Ile Leu Ser Ser Leu Thr Val Thr Gln Leu Leu Arg Arg Leu His
 1 5 10 15

Gln Trp Ile Ser Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu
 20 25 30

Arg Asp Ile Trp Asp
 35

<210> 27

<211> 47

<212> PRT

<213> Hepatitis C virus

<400> 27

Val Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys Pro Gly
 1 5 10 15

Ile Tyr Arg Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp
 20 25 30

Ser Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr
 35 40 45

<210> 28

<211> 53

<212> PRT

<213> Hepatitis C virus

<400> 28

Leu Pro Ala Pro Asn Tyr Lys Phe Ala Leu Trp Arg Val Ser Ala Glu
 1 5 10 15

Glu Tyr Val Glu Ile Arg Arg Val Gly Asp Phe His Tyr Val Ser Gly
 20 25 30

Met Thr Thr Asp Asn Leu Lys Cys Pro Cys Gln Ile Pro Ser Pro Glu
 35 40 45

Phe Phe Thr Glu Leu

50

<210> 29
<211> 112
<212> PRT
<213> Hepatitis C virus

<400> 29
Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Leu Glu Val Ile Lys
1 5 10 15

Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp Glu
 20 25 30

Leu Ala Ala Lys Leu Val Ala Leu Gly Ile Asn Ala Val Ala Tyr Tyr
35 40 45

Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp Val Val Val
50 55 60

Val Ser Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp Phe Asp Ser
65 70 75 80

Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser Leu
85 90 95

Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Leu Pro Gln Asp Ala Val
68 100 105 110

<210> 30
<211> 54
<212> PRT
<213> Hepatitis C virus

<400> 30
Val Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala
1 5 10 15

Val Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His
20 25 30

Val Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg Val
35 40 45

Thr Ala Ile Leu Ser Ser
50

<210> 31
<211> 102
<212> PRT
<213> Hepatitis C virus

<400> 31
 Ala Ile Lys Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr
 1 5 10 15
 Asn Ser Arg Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly
 20 25 30
 Val Leu Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala
 35 40 45
 Arg Ala Ala Cys Arg Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val
 50 55 60
 Cys Gly Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu
 65 70 75 80
 Asp Ala Ala Ser Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser
 85 90 95
 Ala Pro Pro Gly Asp Pro
 100

<210> 32
 <211> 79
 <212> PRT
 <213> Hepatitis C virus

<400> 32
 Leu Gln Val Leu Asp Ser His Tyr Gln Asp Val Leu Lys Glu Val Lys
 1 5 10 15
 Ala Ala Ala Ser Lys Val Lys Ala Asn Leu Leu Ser Val Glu Glu Ala
 20 25 30
 Cys Ser Leu Thr Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly
 35 40 45
 Ala Lys Asp Val Arg Cys His Ala Arg Lys Ala Val Ala His Ile Asn
 50 55 60
 Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Val Thr Pro Ile Asp
 65 70 75

<210> 33
 <211> 61
 <212> PRT
 <213> Hepatitis C virus

<400> 33
 Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr
 1 5 10 15
 Thr Thr Leu Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg
 20 25 30
 Thr Gly Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly Glu
 35 40 45

Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu
 50 55 60

<210> 34
<211> 77
<212> PRT
<213> Hepatitis C virus

<400> 34
Val Leu Asp Ser His Tyr Gln Asp Val Leu Lys Glu Val Lys Ala Ala
 1 5 10 15
Ala Ser Lys Val Lys Ala Asn Leu Leu Ser Val Glu Glu Ala Cys Ser
 20 25 30
Leu Thr Pro Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys
 35 40 45
Asp Val Arg Cys His Ala Arg Lys Ala Val Ala His Ile Asn Ser Val
 50 55 60

Trp Lys Asp Leu Leu Glu Asp Ser Val Thr Pro Ile Asp
 65 70 75

<210> 35 .
<211> 26
<212> PRT
<213> Hepatitis C virus

<400> 35
Tyr Pro Pro Arg Pro Cys Gly Ile Val Pro Ala Lys Ser Val Cys Gly
 1 5 10 15
Pro Val Tyr Cys Phe Thr Pro Ser Pro Val
 20 25

<210> 36
<211> 37
<212> PRT
<213> Hepatitis C virus

<400> 36
Pro Ile Ser Tyr Ala Asn Gly Ser Gly Leu Asp Glu Arg Pro Tyr Cys
 1 5 10 15
Trp His Tyr Pro Pro Arg Pro Cys Gly Ile Val Pro Ala Lys Ser Val
 20 25 30
Cys Gly Pro Val Tyr
 35

<210> 37

<211> 35
<212> PRT
<213> Hepatitis C virus

<400> 37
Thr Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu
1 5 10 15
Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp Asp Trp
20 25 30
Ile Cys Glu
35

<210> 38
<211> 25
<212> PRT
<213> Hepatitis C virus

<400> 38
Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu Cys Thr Thr Pro
1 5 10 15
Cys Ser Gly Ser Trp Leu Arg Asp Ile
20 25

<210> 39
<211> 152
<212> DNA
<213> Hepatitis C virus

<400> 39
cttgggccg cgcaggggcc ctagattggg tggcgccgcg acgaggaaga cttccgagcg 60
gtcgcaacct cgaggtagac gtcagctat ccccaaggca cgtcgccccg agggcaggac 120
ctgggctcag cccgggtacc ctggccct ct 152

<210> 40
<211> 106
<212> DNA
<213> Hepatitis C virus

<400> 40
tggcaggggg aagccaggca tctatacatt tggcaccgc ggggagcgcc cctccggcat 60
gttcgactcg tccgtctct gtgagtgtca tgacgcggc tgtgtc 106

<210> 41
<211> 234
<212> DNA
<213> Hepatitis C virus

<400> 41
taacaccaac cgtcgccccac aggacgtcaa gttccgggt ggcggtcaga tcgttggtgg 60
agtttacttg ttggcgccga ggggccttag atgggtgtg cgcgcacga ggaagacttc 120
cgagcggctcg caacctcgag gtagacgtca gcctatcccc aaggcacgtc ggcccggagg 180
caggacacctgg gtcagcccg ggtacccttg gccctctat ggcaatgagg gttg 234

<210> 42
<211> 114
<212> DNA
<213> Hepatitis C virus

<400> 42
tcccagcccc gtgggtggta gaacgaccga caggtcgggc ggcgcctacct acagctgggg 60
tgcaaatgat acggatgtct tcgtccctaa caacaccagg ccaccgctgg gcaa 114

<210> 43
<211> 453
<212> DNA
<213> Hepatitis C virus

<400> 43
ctccagact caacgcgggg gcaggactgg cagggggaaag ccaggcatct atagattgt 60
ggcacccgggg gagcgcggccct ccggcatgtt cgactcggtcc gtcctctgtg agtgctatga 120
cgccggctgt gcttggatg agctcacgccc cggcgagact acagtttaggc tacgagcgta 180
catgaacacc cgggggcttc ccgtgtgcca ggaccatctt gaattttggg agggcgcttt 240
tacggggcttc actcatatag atgcccactt ttatcccag accaaagcaga gtggggagaaa 300
ctttccttac ctggtagcgt accaagccac cgtgtgcgtt agggctcaag cccctcccc 360
atcggtggac cagatgtgga agtgtttgat ccgccttaaa cccaccctcc atgggccaac 420
acccctgtca tacagactgg ggcgtgttca gaa 453

<210> 44
<211> 85
<212> DNA
<213> Hepatitis C virus

<400> 44
tcccagcccc gtgggtggta gaacgaccga caggtcgggc ggcgcctacct acagctgggg 60
tgcaaatgat acggatgtct tcgtc 85

<210> 45
<211> 80
<212> DNA
<213> Hepatitis C virus

<400> 45
ccctccaaga ctttgtggca ttgtgccgc aaagagcgtg tgtggccgg tatattgctt 60
cactcccagc cccgtgggtgg 80

<210> 46
<211> 165
<212> DNA
<213> Hepatitis C virus

<400> 46
ctgcgtggtc atagtggca ggatcgcttt gtccggaaag cggcaatta tacctgacag 60
ggagggttctc taccaggagt tcgtgagat ggaagagtgc tctcagcact taccgtacat 120
cgagcaaggg atgatgctcg ctgagcagtt caagcagaag gccct 165

<210> 47
<211> 123

<212> DNA
<213> Hepatitis C virus

<400> 47
cggcgactc gactctgtga tagactgcaa cacgtgtgtc actcagacag tcgatttcag 60
ccttgaccct acctttacca ttgagacaac cacgctcccc caggatgctg tctccaggac 120
tca 123

<210> 48
<211> 87
<212> DNA
<213> Hepatitis C virus

<400> 48
ggagcgcccc tccggcatgt tcgactcgtc cgtcctctgt gagtgctatg acgcgggctg 60
tgcttggat gagctcacgc ccgcga 87

<210> 49
<211> 84
<212> DNA
<213> Hepatitis C virus

<400> 49
caggggaaag ccaggcatct atagatttgt ggcaccgggg gagcgccct ccggcatgtt 60
cgactcggtcc gtccctgtg agtg 84

<210> 50
<211> 128
<212> DNA
<213> Hepatitis C virus

<400> 50
tctggaagac agtgtaacac caatagacac taccatcatg gccaaagaacg aggtttctg 60
cgttcagctt gagaaggggg gtcgtaagcc agtcgtctc atcgtgttcc ccgacacctggg 120
cgtgcgcgc 128

<210> 51
<211> 85
<212> DNA
<213> Hepatitis C virus

<400> 51
tcccacccggc agcgtaaga gcaccaaggt cccggctgctg tacgcagccc agggctacaa 60
ggtgttggtg ctcaacccct ctgtt 85

<210> 52
<211> 102
<212> DNA
<213> Hepatitis C virus

<400> 52
cgaacgcccc tactgctggc actaccctcc aagaccttgtt ggcattgtgc ccgcaaagag 60
cgtgtgtggc ccgttatatt gtttcactcc cagccccgtg gt 102

<210> 53

<211> 95
<212> DNA
<213> Hepatitis C virus

<400> 53
tccccagcccc gtgggtggtaa gaacgaccga caggtcgggc ggcctaccc acagctgggg 60
tgcaaatatgtt acggatgtct tggccctaa caaca 95

<210> 54
<211> 234
<212> DNA
<213> Hepatitis C virus

<400> 54
ggcgaggact cttagatcat tcaagatcat gagcggttag gtccctcca cggaggacct 60
ggtaatctg ctggccgcca tcctctcgcc tgagccctt gtgtcggtg tggctgcgc 120
agcaatactg cgccggcacg ttggccggg cgagggggca gtgcaatgga tgaaccggct 180
aatagccccc gcctccggg ggaaccatgt ttcccccacg cactacgtgc cgg 234

<210> 55
<211> 442
<212> DNA
<213> Hepatitis C virus

<400> 55
tgagggtccag atcggtgtcaa ctgctaccca aaccccttcgt gcaacgtgca tcaatgggg 60
atgctggact gtctaccacg gggccggAAC gaggaccatc gcatcacccca agggtcctgt 120
catccagatg tataccaatg tggaccaaga cttgtgggc tggcccgctc ctcaaggttc 180
ccgctcattt acaccctgtt cctgcggctc ctcggacctt tacctggta cgaggcacgc 240
cgatgtcatt cccgtgcgcc ggcgaggtga tagcaggggt agcctgctt cggccggcc 300
catttcctac ttgaaaggct cctcgggggg tccgtgttg tgcccccggg gacacgcccgt 360
ggccctattt agggccggg tggatggct aaagcgggtgg acttttatccc 420
tgtggagaac cttagggacaa cc 442

<210> 56
<211> 111
<212> DNA
<213> Hepatitis C virus

<400> 56
tgtaaccagg ctccctgaggc gactgcatca gtggataagc tcggagtgtt ccactccatg 60
ctccgggttcc tggctaaggaa acatctggaa ctggatatgc gaggtgctga g 111

<210> 57
<211> 87
<212> DNA
<213> Hepatitis C virus

<400> 57
cgtgtgtggc ccggtatatt gtttactcc cagccccgtg gtgggtggaa cgaccgacag 60
gtcggggcgcc cctacacctaca gctgggg 87

<210> 58
<211> 137
<212> DNA
<213> Hepatitis C virus

<400> 58
 cccgcccctg cgagcttgg aacaccgggc ccggagcgtc cgcgcttaggc ttctgtccag 60
 aggaggcagg gctgccatat gtggcaagta cctttcaac tggcagtaa gaacaaagct 120
 ccaaactcact ccaatag 137

<210> 59
<211> 259
<212> DNA
<213> Hepatitis C virus

<400> 59
 tactgcctt gtgggtgctg gcctagctgg cgccgccatc ggcagcggt gactggggaa 60
 ggtcctcggt gacattcttg caggatgg cgccggcggt gcgggagctc ttgttagcatt 120
 caagatcatg agcggtgagg tccccccac ggaggacctg gtcaatctgc tgcccgccat 180
 cctctcgct ggagccctt tagtcggtgt ggtctgcgca gcaatactgc gccggcacgt 240
 tggcccgggc gagggggca 259

<210> 60
<211> 130
<212> DNA
<213> Hepatitis C virus

<400> 60
 tggcattgtg cccgcaaaga gcgtgtgtgg cccggatatat tgcttcactc ccagccccgt 60
 ggtgggtggga acgaccgaca ggtcgggcgc gcctacctac agctgggtg caaatgatac 120
 ggatgtttc 130

<210> 61
<211> 191
<212> DNA
<213> Hepatitis C virus

<400> 61
 ggtcctcggt gacattcttg caggatgg cgccggcggt gcgggagctc ttgttagcatt 60
 caagatcatg agcggtgagg tccccccac ggaggacctg gtcaatctgc tgcccgccat 120
 cctctcgct ggagccctt tagtcggtgt ggtctgcgca gcaatactgc gccggcacgt 180
 tggcccgggc g 191

<210> 62
<211> 89
<212> DNA
<213> Hepatitis C virus

<400> 62
 cgaaccccc tactgctggc actaccctcc aagaccttgc ggcattgtgc ccgcaaagag 60
 cgtgtgtggc ccgttatatt gcttcactc 89

<210> 63
<211> 230
<212> DNA
<213> Hepatitis C virus

<400> 63
 caggcgccac tggacgacgc aagactgcaa ttgttctatc tatccggcc atataacggg 60
 tcatacgatg gcatggata tggatgtgaa ctggccccct acggcagcgt tgggtggtagc 120

tcagctgctc cgatcccac aagccatcat ggacatgatc gctggtgctc actggggagt 180
 cctggcggtc atagcgtatt tctccatggt ggggaactgg gcgaagggtcc 230

<210> 64
 <211> 113
 <212> DNA
 <213> Hepatitis C virus

<400> 64
 tgccatactc agcagcctca ctgtaaccca gtcctgagg cgactgcatt agtggataag 60
 ctcggagttt accactccat gtcgggttc ctggctaagg gacatctggg act 113

<210> 65
 <211> 142
 <212> DNA
 <213> Hepatitis C virus

<400> 65
 tgtctccagg actcaacgcc gggcaggac tggcaggggg aagccaggca tctatagatt 60
 tgtggcaccc gggagcgcc ctcggcat gttcgactcg tccgtcctt gtgagtgtca 120
 tgacgcgggc tgtgcttggt at 142

<210> 66
 <211> 162
 <212> DNA
 <213> Hepatitis C virus

<400> 66
 ctttcctgcg ccgaactata agttcgct gtggaggggtg tctgcagagg aatacgtgga 60
 gataaggcgg gtggggact tccactacgt atcgggtatg actactgaca atcttaatg 120
 cccgtggccat atccccatcgc ccgaatttt cacagaattt ga 162

<210> 67
 <211> 337
 <212> DNA
 <213> Hepatitis C virus

<400> 67
 cggagagatc cccttttacg gcaaggctat cccctcgag gtgatcaagg gggaaagaca 60
 tctcatcttc tgccactcaa agaagaagtg cgacgagctc gcccgaagg tggtcgcatt 120
 gggcatcaat gccgtggctt actaccgcgg tcttgcgtt tctgtcatcc cgaccagcgg 180
 cgatgttgtc gtcgtgtcga ccgatgtct catgactggc tttaccggcg acttcgactc 240
 tgtgatagac tgcaacacgt gtgtcactca gacagtgcgtt ttcagcctt accctacctt 300
 taccatttgcg acaaccacgc tccccagga tgctgtc 337

<210> 68
 <211> 163
 <212> DNA
 <213> Hepatitis C virus

<400> 68
 ggtctgcgca gcaatactgc gcccggcacgt tggccggggc gagggggcag tgcaatggat 60
 gaaccggctta atagccttcg cctccgggg gaaccatgtt tccccacgc actacgtgcc 120
 ggagagcgat gcagccggcc gctgtcactgc catactcagc agc 163

<210> 69
<211> 309
<212> DNA
<213> Hepatitis C virus

<400> 69
ggccatcaag tccctcaactg agaggctta tttttggggc cctcttacca attcaagggg 60
ggaaaactgc ggctaccgca ggtgccgcgc gagcggcgta ctgacaacta gctgtggtaa 120
caccctcaact tgctacatca aggcccggc acgcgttcga gccgcagggc tccaggactg 180
caccatgctc gtgtgtggcg acgacttagt cgttatctgt gaaagtgcgg gggtccagga 240
ggacgcggcg agcctgagag cttcacgga ggctatgacc aggtactccg ccccccccg 300
ggacccccc 309

<210> 70
<211> 240
<212> DNA
<213> Hepatitis C virus

<400> 70
actgcaagtt ctggacagcc attaccagga cgtgctcaag gaggtaaag cagcggcg 60
aaaagtgaag gctaacttgc tatccgtaga ggaagcttgc agcctgacgc ccccacattc 120
agccaaatcc aagtttggct atggggcaaa agacgtccgt tgccatgcca gaaaggccgt 180
agcccacatc aactccgtgt ggaaagacct tctggaagac agtgtaaacac caatagacac 240

<210> 71
<211> 184
<212> DNA
<213> Hepatitis C virus

<400> 71
cactcagaca gtcgatttca gccttgaccc taccttacc attgagacaa ccacgctccc 60
ccaggatgct gtctccagga ctcaacgccc gggcaggact ggcaggggg agccaggcat 120
ctatacgattt gtggcaccgg gggagcgcctt ctcggcatg ttgcactcgt ccgtcctctg 180
tgag 184

<210> 72
<211> 234
<212> DNA
<213> Hepatitis C virus

<400> 72
agttctggac agccattacc aggacgtgct caaggaggc aaagcagcgg cgtaaaaagt 60
gaaggctaac ttgctatccg tagaggaagc ttgcagcctg acgccccac attcagccaa 120
atccaagttt ggctatgggg caaaagacgt ccgttgcctt gccagaaagg ccgtagccca 180
catcaactcc gtgtggaaag accttctgaa agacagtgtt acaccaatac acac 234

<210> 73
<211> 80
<212> DNA
<213> Hepatitis C virus

<400> 73
ctaccctcca agaccttgc gcattgtgcc cgcaaagagc gtgtgtggcc cggtatattg 60
cttcactccc agcccccgtgg 80

<210> 74

<211> 112
<212> DNA
<213> Hepatitis C virus

<400> 74
tcctatcagt tatgccaacg gaagcggcct cgacgaacgc ccctactgct ggcaactaccc 60
tccaagacct tgtggcattg tgccccaaa gagcgtgtgt ggcgggtat at 112

<210> 75
<211> 107
<212> DNA
<213> Hepatitis C virus

<400> 75
cactgtaacc cagctcctga ggcgactgca tcagtggata agctcgagg gtaccactcc 60
atgctccggc ttctggctaa gggacatctg ggactggata tgcgagg 107

<210> 76
<211> 78
<212> DNA
<213> Hepatitis C virus

<400> 76
gctcctgagg cgactgcattc agtggataag ctcggagtgt accactccat gctccggttc 60
ctggctaagg gacatctg 78

<210> 77
<211> 103
<212> PRT
<213> Hepatitis C virus

<400> 77
Ala Cys Glu Cys Pro Gly Arg Ser Arg Arg Pro Cys Thr Met Ser Thr
1 5 10 15

Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn Arg Arg Pro
20 25 30

Gln Asp Val Lys Phe Pro Gly Gly Gln Ile Val Gly Gly Val Tyr
35 40 45

Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala Thr Arg Lys
50 55 60

Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys
65 70 75 80

Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly Tyr Pro Trp
85 90 95

Pro Leu Tyr Gly Asn Glu Gly
100

<210> 78
<211> 113
<212> PRT

<213> Hepatitis C virus

<400> 78

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
					20			25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
						35		40					45		

Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
					50			55			60				

Ile	Pro	Lys	Ala	Arg	Arg	Pro	Glu	Gly	Arg	Thr	Trp	Ala	Gln	Pro	Gly
					65		70		75				80		

Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Cys	Gly	Trp	Ala	Gly	Trp
					85			90				95			

Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Thr	Asp	Pro
					100		105					110			

Arg

<210> 79

<211> 114

<212> PRT

<213> Hepatitis C virus

<400> 79

Ala	Ile	Leu	His	Thr	Pro	Gly	Cys	Val	Pro	Cys	Val	Arg	Glu	Gly	Asn
1				5				10				15			

Ala	Ser	Arg	Cys	Trp	Val	Ala	Val	Thr	Pro	Thr	Val	Ala	Thr	Arg	Asp
				20				25				30			

Gly	Lys	Leu	Pro	Thr	Thr	Gln	Leu	Arg	Arg	His	Ile	Asp	Leu	Leu	Val
					35		40				45				

Gly	Ser	Ala	Thr	Leu	Cys	Ser	Ala	Leu	Tyr	Val	Gly	Asp	Leu	Cys	Gly
					50		55			60					

Ser	Val	Phe	Leu	Val	Gly	Gln	Leu	Phe	Thr	Phe	Ser	Pro	Arg	Arg	His
65				70				75				80			

Trp	Thr	Thr	Gln	Asp	Cys	Asn	Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr
					85			90			95				

Gly	His	Arg	Met	Ala	Trp	Asp	Met	Met	Asn	Trp	Ser	Pro	Thr	Ala	
				100			105				110				

Ala Leu

<210> 80
<211> 91
<212> PRT
<213> Hepatitis C virus

<400> 80
Gly Val Asp Ala Glu Thr His Val Thr Gly Gly Asn Ala Gly Arg Thr
1 5 10 15

Thr Ala Gly Leu Val Gly Leu Leu Thr Pro Gly Ala Lys Gln Asn Ile
20 25 30

Gln Leu Ile Asn Thr Asn Gly Ser Trp His Ile Asn Ser Thr Ala Leu
35 40 45

Asn Cys Asn Glu Ser Leu Asn Thr Gly Trp Leu Ala Gly Leu Phe Tyr
50 55 60

Gln His Lys Phe Asn Ser Ser Gly Cys Pro Glu Arg Leu Ala Ser Cys
65 70 75 80

Arg Arg Leu Thr Asp Phe Ala Gln Gly Trp Gly
85 90

<210> 81
<211> 176
<212> PRT
<213> Hepatitis C virus

<400> 81
Trp Gly Pro Ile Ser Tyr Ala Asn Gly Ser Gly Leu Asp Glu Arg Pro
1 5 10 15

Tyr Cys Trp His Tyr Pro Pro Arg Pro Cys Gly Ile Val Pro Ala Lys
20 25 30

Ser Val Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val
35 40 45

Gly Thr Thr Asp Arg Ser Gly Ala Pro Thr Tyr Ser Trp Gly Ala Asn
50 55 60

Asp Thr Asp Val Phe Val Leu Asn Asn Thr Arg Pro Pro Leu Gly Asn
65 70 75 80

Trp Phe Gly Cys Thr Trp Met Asn Ser Thr Gly Phe Thr Lys Val Cys
85 90 95

Gly Ala Pro Pro Cys Val Ile Gly Gly Val Gly Asn Asn Thr Leu Leu
100 105 110

Cys Pro Thr Asp Cys Phe Arg Lys His Pro Glu Ala Thr Tyr Ser Arg
115 120 125

Cys Gly Ser Gly Pro Trp Ile Thr Pro Arg Cys Met Val Asp Tyr Pro
130 135 140

Tyr Arg Leu Trp His Tyr Pro Cys Thr Ile Asn Tyr Thr Ile Phe Lys
145 150 155 160

Val Arg Met Tyr Val Gly Gly Val Glu His Arg Leu Glu Ala Ala Cys
 165 170 175

<210> 82
 <211> 96
 <212> PRT
 <213> Hepatitis C virus

<400> 82
 Trp His Tyr Pro Pro Arg Pro Cys Gly Ile Val Pro Ala Lys Ser Val
 1 5 10 15

Cys Gly Pro Val Tyr Cys Phe Thr Pro Ser Pro Val Val Val Gly Thr
 20 25 30

Thr Asp Arg Ser Gly Ala Pro Thr Tyr Ser Trp Gly Ala Asn Asp Thr
 35 40 45

Asp Val Phe Val Leu Asn Asn Thr Arg Pro Pro Leu Gly Asn Trp Phe
 50 55 60

Gly Cys Thr Trp Met Asn Ser Thr Gly Phe Thr Lys Val Cys Gly Ala
 65 70 75 80

Pro Pro Cys Val Ile Gly Gly Val Gly Asn Asn Thr Leu Leu Cys Pro
 85 90 95

<210> 83
 <211> 278
 <212> PRT
 <213> Hepatitis C virus

<400> 83
 Ala Ala Cys Gly Asp Ile Ile Asn Gly Leu Pro Val Ser Ala Arg Arg
 1 5 10 15

Gly Gln Glu Ile Leu Leu Gly Pro Ala Asp Gly Met Val Ser Lys Gly
 20 25 30

Trp Arg Leu Leu Ala Pro Ile Thr Ala Tyr Ala Gln Gln Thr Arg Gly
 35 40 45

Leu Leu Gly Cys Ile Ile Thr Ser Leu Thr Gly Arg Asp Lys Asn Gln
 50 55 60

Val Glu Gly Glu Val Gln Ile Val Ser Thr Ala Thr Gln Thr Phe Leu
 65 70 75 80

Ala Thr Cys Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly
 85 90 95

Thr Arg Thr Ile Ala Ser Pro Lys Gly Pro Val Ile Gln Met Tyr Thr
 100 105 110
 Asn Val Asp Gln Asp Leu Val Gly Trp Pro Ala Pro Gln Gly Ser Arg
 115 120 125
 Ser Leu Thr Pro Cys Thr Cys Gly Ser Ser Asp Leu Tyr Leu Val Thr
 130 135 140
 Arg His Ala Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly
 145 150 155 160
 Ser Leu Leu Ser Pro Arg Pro Ile Ser Tyr Leu Lys Gly Ser Ser Gly
 165 170 175
 Gly Pro Leu Leu Cys Pro Ala Gly His Ala Val Gly Leu Phe Arg Ala
 180 185 190
 Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val
 195 200 205
 Glu Asn Leu Gly Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser
 210 215 220
 Ser Pro Pro Ala Val Pro Gln Ser Phe Gln Val Ala His Leu His Ala
 225 230 235 240
 Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala
 245 250 255
 Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu
 260 265 270
 Gly Phe Gly Ala Tyr Met
 275

<210> 84
 <211> 158
 <212> PRT
 <213> Hepatitis C virus

<400> 84
 Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Ile
 1 5 10 15
 Ser Tyr Leu Lys Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala Gly
 20 25 30
 His Ala Val Gly Leu Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala
 35 40 45
 Lys Ala Val Asp Phe Ile Pro Val Glu Asn Leu Gly Thr Thr Met Arg
 50 55 60
 Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Ser
 65 70 75 80
 Phe Gln Val Ala His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr

85	90	95
Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu		
100	105	110
Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys		
115	120	125
Ala His Gly Val Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr		
130	135	140
Thr Gly Ser Pro Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu		
145	150	155

<210> 85
<211> 263
<212> PRT
<213> Hepatitis C virus

<400> 85			
Asp Ser Arg Gly Ser Leu Leu Ser Pro Arg Pro Ile Ser Tyr Leu Lys			
1	5	10	15
Gly Ser Ser Gly Gly Pro Leu Leu Cys Pro Ala Gly His Ala Val Gly			
20	25	30	
Leu Phe Arg Ala Ala Val Cys Thr Arg Gly Val Ala Lys Ala Val Asp			
35	40	45	
Phe Ile Pro Val Glu Asn Leu Gly Thr Thr Met Arg Ser Pro Val Phe			
50	55	60	
Thr Asp Asn Ser Ser Pro Pro Ala Val Pro Gln Ser Phe Gln Val Ala			
65	70	75	80
His Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Ala			
85	90	95	
Ala Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val			
100	105	110	
Ala Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly Val			
115	120	125	
Asp Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ser Pro			
130	135	140	
Ile Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser			
145	150	155	160
Gly Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr Asp			
165	170	175	
Ala Thr Ser Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu Thr			
180	185	190	
Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly Ser			
195	200	205	

Val Thr Val Ser His Pro Asn Ile Glu Glu Val Ala Leu Ser Thr Thr
 210 215 220

Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Leu Glu Val Ile Lys
 225 230 235 240

Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp Glu
 245 250 255

Leu Ala Ala Lys Leu Val Ala
 260

<210> 86
 <211> 194
 <212> PRT
 <213> Hepatitis C virus

<400> 86

Asp	Asn	Ser	Ser	Pro	Pro	Ala	Val	Pro	Gln	Ser	Phe	Gln	Val	Ala	His
1				5				10					15		

Leu His Ala Pro Thr Gly Ser Gly Lys Ser Thr Lys Val Pro Ala Ala
 20 25 30

Tyr Ala Ala Gln Gly Tyr Lys Val Leu Val Leu Asn Pro Ser Val Ala
 35 40 45

Ala Thr Leu Gly Phe Gly Ala Tyr Met Ser Lys Ala His Gly Val Asp
 50 55 60

Pro Asn Ile Arg Thr Gly Val Arg Thr Ile Thr Thr Gly Ser Pro Ile
 65 70 75 80

Thr Tyr Ser Thr Tyr Gly Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly
 85 90 95

Gly Ala Tyr Asp Ile Ile Cys Asp Glu Cys His Ser Thr Asp Ala
 100 105 110

Thr Ser Ile Leu Gly Ile Gly Thr Val Leu Asp Gln Ala Glu Thr Ala
 115 120 125

Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro Pro Gly Ser Val
 130 135 140

Thr Val Ser His Pro Asn Ile Glu Glu Val Ala Leu Ser Thr Thr Gly
 145 150 155 160

Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Leu Glu Val Ile Lys Gly
 165 170 175

Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu
 180 185 190

Ala Ala

<210> 87
<211> 205
<212> PRT
<213> Hepatitis C virus

<400> 87
Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile Ile Cys
1 5 10 15
Asp Glu Cys His Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly Thr
20 25 30
Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala
35 40 45
Thr Ala Thr Pro Pro Gly Ser Val Thr Val Ser His Pro Asn Ile Glu
50 55 60
Glu Val Ala Leu Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala
65 70 75 80
Ile Pro Leu Glu Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys His
85 90 95
Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu Gly
100 105 110
Ile Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro
115 120 125
Thr Ser Gly Asp Val Val Val Ser Thr Asp Ala Leu Met Thr Gly
130 135 140
Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys Val Thr
145 150 155 160
Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr
165 170 175
Thr Leu Pro Gln Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg Thr
180 185 190
Gly Arg Gly Lys Pro Gly Ile Tyr Arg Phe Val Ala Pro
195 200 205

<210> 88
<211> 186
<212> PRT
<213> Hepatitis C virus

<400> 88
Ser Thr Asp Ala Thr Ser Ile Leu Gly Ile Gly Thr Val Leu Asp Gln
1 5 10 15
Ala Glu Thr Ala Gly Ala Arg Leu Val Val Leu Ala Thr Ala Thr Pro
20 25 30
Pro Gly Ser Val Thr Val Ser His Pro Asn Ile Glu Glu Val Ala Leu
35 40 45

Ser Thr Thr Gly Glu Ile Pro Phe Tyr Gly Lys Ala Ile Pro Leu Glu
 50 55 60

 Val Ile Lys Gly Gly Arg His Leu Ile Phe Cys His Ser Lys Lys Lys
 65 70 75 80

 Cys Asp Glu Leu Ala Ala Lys Leu Val Ala Leu Gly Ile Asn Ala Val
 85 90 95

 Ala Tyr Tyr Arg Gly Leu Asp Val Ser Val Ile Pro Thr Ser Gly Asp
 100 105 110

 Val Val Val Val Ser Thr Asp Ala Leu Met Thr Gly Phe Thr Gly Asp
 115 120 125

 Phe Asp Ser Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp
 130 135 140

 Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Leu Pro Gln
 145 150 155 160

 Asp Ala Val Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys
 165 170 175

 Pro Gly Ile Tyr Arg Phe Val Ala Pro Gly
 180 185

<210> 89
 <211> 158
 <212> PRT
 <213> Hepatitis C virus

<400> 89
 Val Ile Asp Cys Asn Thr Cys Val Thr Gln Thr Val Asp Phe Ser Leu
 1 5 10 15

 Asp Pro Thr Phe Thr Ile Glu Thr Thr Thr Leu Pro Gln Asp Ala Val
 20 25 30

 Ser Arg Thr Gln Arg Arg Gly Arg Thr Gly Arg Gly Lys Pro Gly Ile
 35 40 45

 Tyr Arg Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp Ser
 50 55 60

 Ser Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu
 65 70 75 80

 Thr Pro Ala Glu Thr Thr Val Arg Leu Arg Ala Tyr Met Asn Thr Pro
 85 90 95

 Gly Leu Pro Val Cys Gln Asp His Leu Glu Phe Trp Glu Gly Val Phe
 100 105 110

 Thr Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln
 115 120 125

 Ser Gly Glu Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys

130

135

140

Ala Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp
 145 150 155

<210> 90

<211> 129

<212> PRT

<213> Hepatitis C virus

<400> 90

Arg Phe Val Ala Pro Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Ser
 1 5 10 15

Val Leu Cys Glu Cys Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr
 20 25 30

Pro Ala Glu Thr Thr Val Arg Leu Arg Ala Tyr Met Asn Thr Pro Gly
 35 40 45

Leu Pro Val Cys Gin Asp His Leu Glu Phe Trp Glu Gly Val Phe Thr
 50 55 60

Gly Leu Thr His Ile Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ser
 65 70 75 80

Gly Glu Asn Phe Pro Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Ala
 85 90 95

Arg Ala Gln Ala Pro Pro Pro Ser Trp Asp Gln Met Trp Lys Cys Leu
 100 105 110

Ile Arg Leu Lys Pro Thr Leu His Gly Pro Thr Pro Leu Leu Tyr Arg
 115 120 125

Leu

<210> 91

<211> 51

<212> PRT

<213> Hepatitis C virus

<400> 91

Thr Ser Thr Trp Val Leu Val Gly Gly Val Leu Ala Ala Leu Ala Ala
 1 5 10 15

Tyr Cys Leu Ser Thr Gly Cys Val Val Ile Val Gly Arg Ile Val Leu
 20 25 30

Ser Gly Lys Pro Ala Ile Ile Pro Asp Arg Glu Val Leu Tyr Gln Glu
 35 40 45

Phe Asp Glu
 50

<210> 92
 <211> 18
 <212> PRT
 <213> Hepatitis C virus

<400> 92
 Ala Ala Leu Ala Ala Tyr Cys Leu Ser Thr Gly Cys Val Val Ile Val
 1 5 10 15

Gly Arg

<210> 93
 <211> 208
 <212> PRT
 <213> Hepatitis C virus

<400> 93
 Phe Thr Ala Ala Val Thr Ser Pro Leu Thr Thr Gly Gln Thr Leu Leu
 1 5 10 15

Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Ala Pro Gly
 20 25 30

Ala Ala Thr Ala Phe Val Gly Ala Gly Leu Ala Gly Ala Ala Ile Gly
 35 40 45

Ser Val Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly
 50 55 60

Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Ile Met Ser Gly Glu
 65 70 75 80

Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser
 85 90 95

Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg
 100 105 110

His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile
 115 120 125

Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro
 130 135 140

Glu Ser Asp Ala Ala Ala Arg Val Thr Ala Ile Leu Ser Ser Leu Thr
 145 150 155 160

Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu Cys
 165 170 175

Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp Asp Trp Ile
 180 185 190

Cys Glu Val Leu Ser Asp Phe Lys Thr Trp Leu Lys Ala Lys Leu Met
 195 200 205

<210> 94
<211> 207
<212> PRT
<213> Hepatitis C virus

<400> 94
Thr Ala Phe Val Gly Ala Gly Leu Ala Gly Ala Ala Ile Gly Ser Val
1 5 10 15
Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly Ala Gly
20 25 30
Val Ala Gly Ala Leu Val Ala Phe Lys Ile Met Ser Gly Glu Val Pro
35 40 45
Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly
50 55 60
Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg His Val
65 70 75 80
Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile Ala Phe
85 90 95
Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro Glu Ser
100 105 110
Asp Ala Ala Ala Arg Val Thr Ala Ile Leu Ser Ser Leu Thr Val Thr
115 120 125
Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu Cys Thr Thr
130 135 140
Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp Asp Trp Ile Cys Glu
145 150 155 160
Val Leu Ser Asp Phe Lys Thr Trp Leu Lys Ala Lys Leu Met Pro Gln
165 170 175
Leu Pro Gly Ile Pro Phe Val Ser Cys Gln Arg Gly Tyr Arg Gly Val
180 185 190
Trp Arg Gly Asp Gly Ile Met His Thr Arg Cys His Cys Gly Ala
195 200 205

<210> 95
<211> 225
<212> PRT
<213> Hepatitis C virus

<400> 95
Leu Val Asp Ile Leu Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu
1 5 10 15
Val Ala Phe Lys Ile Met Ser Gly Glu Val Pro Ser Thr Glu Asp Leu

20

25

30

Val Asn Leu Leu Pro Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly
 35 40 45

Val Val Cys Ala Ala Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly
 50 55 60

Ala Val Gln Trp Met Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn
 65 70 75 80

His Val Ser Pro Thr His Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg
 85 90 95

Val Thr Ala Ile Leu Ser Ser Leu Thr Val Thr Gln Leu Leu Arg Arg
 100 105 110

Leu His Gln Trp Ile Ser Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser
 115 120 125

Trp Leu Arg Asp Ile Trp Asp Trp Ile Cys Glu Val Leu Ser Asp Phe
 130 135 140

Lys Thr Trp Leu Lys Ala Lys Leu Met Pro Gln Leu Pro Gly Ile Pro
 145 150 155 160

Phe Val Ser Cys Gln Arg Gly Tyr Arg Gly Val Trp Arg Gly Asp Gly
 165 170 175

Ile Met His Thr Arg Cys His Cys Gly Ala Glu Ile Thr Gly His Val
 180 185 190

Lys Asn Gly Thr Met Arg Ile Val Gly Pro Arg Thr Cys Arg Asn Met
 195 200 205

Trp Ser Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr
 210 215 220

Pro
 225

<210> 96

<211> 145

<212> PRT

<213> Hepatitis C virus

<400> 96

Ala Gly Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Ile
 1 5 10 15

Met Ser Gly Glu Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro
 20 25 30

Ala Ile Leu Ser Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala
 35 40 45

Ile Leu Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met
 50 55 60

Asn Arg Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr
 65 70 75 80

His Tyr Val Pro Glu Ser Asp Ala Ala Arg Val Thr Ala Ile Leu
 85 90 95

Ser Ser Leu Thr Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile
 100 105 110

Ser Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile
 115 120 125

Trp Asp Trp Ile Cys Glu Val Leu Ser Asp Phe Lys Thr Trp Leu Lys
 130 135 140

Ala
 145

<210> 97

<211> 54

<212> PRT

<213> Hepatitis C virus

<400> 97

Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg His Val
 1 5 10 15

Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile Ala Phe
 20 25 30

Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro Glu Ser
 35 40 45

Asp Ala Ala Ala Arg Val
 50

<210> 98

<211> 165

<212> PRT

<213> Hepatitis C virus

<400> 98

Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro Glu Ser
 1 5 10 15

Asp Ala Ala Ala Arg Val Thr Ala Ile Leu Ser Ser Leu Thr Val Thr
 20 25 30

Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser Ser Glu Cys Thr Thr
 35 40 45

Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp Asp Trp Ile Cys Glu
 50 55 60

Val Leu Ser Asp Phe Lys Thr Trp Leu Lys Ala Lys Leu Met Pro Gln
 65 70 75 80

Leu Pro Gly Ile Pro Phe Val Ser Cys Gln Arg Gly Tyr Arg Gly Val
 85 90 95

Trp Arg Gly Asp Gly Ile Met His Thr Arg Cys His Cys Gly Ala Glu
 100 105 110

Ile Thr Gly His Val Lys Asn Gly Thr Met Arg Ile Val Gly Pro Arg
 115 120 125

Thr Cys Arg Asn Met Trp Ser Gly Thr Phe Pro Ile Asn Ala Tyr Thr
 130 135 140

Thr Gly Pro Cys Thr Pro Leu Pro Ala Pro Asn Tyr Lys Phe Ala Leu
 145 150 155 160

Trp Arg Val Ser Ala
 165

<210> 99
 <211> 308
 <212> PRT

H<213> Hepatitis C virus

<400> 99
 Tyr Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr Ala Ile Leu Ser
 1 5 10 15

Ser Leu Thr Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser
 20 25 30

Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp
 35 40 45

Asp Trp Ile Cys Glu Val Leu Ser Asp Phe Lys Thr Trp Leu Lys Ala
 50 55 60

Lys Leu Met Pro Gln Leu Pro Gly Ile Pro Phe Val Ser Cys Gln Arg
 65 70 75 80

Gly Tyr Arg Gly Val Trp Arg Gly Asp Gly Ile Met His Thr Arg Cys
 85 90 95

His Cys Gly Ala Glu Ile Thr Gly His Val Lys Asn Gly Thr Met Arg
 100 105 110

Ile Val Gly Pro Arg Thr Cys Arg Asn Met Trp Ser Gly Thr Phe Pro
 115 120 125

Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Leu Pro Ala Pro Asn
 130 135 140

Tyr Lys Phe Ala Leu Trp Arg Val Ser Ala Glu Glu Tyr Val Glu Ile
 145 150 155 160

Arg Arg Val Gly Asp Phe His Tyr Val Ser Gly Met Thr Thr Asp Asn
 165 170 175

Leu Lys Cys Pro Cys Gln Ile Pro Ser Pro Glu Phe Phe Thr Glu Leu
 180 185 190

Asp Gly Val Arg Leu His Arg Phe Ala Pro Pro Cys Lys Pro Leu Leu
 195 200 205

Arg Glu Glu Val Ser Phe Arg Val Gly Leu His Glu Tyr Pro Val Gly
 210 215 220

Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala Val Leu Thr Ser
 225 230 235 240

Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Ala Ala Gly Arg Arg
 245 250 255

Leu Ala Arg Gly Ser Pro Pro Ser Met Ala Ser Ser Ser Ala Ser Gln
 260 265 270

Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Ala Asn His Asp Ser
 275 280 285

Pro Asp Ala Glu Leu Ile Glu Ala Asn Leu Leu Trp Arg Gln Glu Met
 290 295 300

Gly Gly Asn Ile

305

<210> 100

<211> 283

<212> PRT

<213> Hepatitis C virus

* <400> 100

Leu Ser Ser Leu Thr Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp
 1 5 10 15

Ile Ser Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp
 20 25 30

Ile Trp Asp Trp Ile Cys Glu Val Leu Ser Asp Phe Lys Thr Trp Leu
 35 40 45

Lys Ala Lys Leu Met Pro Gln Leu Pro Gly Ile Pro Phe Val Ser Cys
 50 55 60

Gln Arg Gly Tyr Arg Gly Val Trp Arg Gly Asp Gly Ile Met His Thr
 65 70 75 80

Arg Cys His Cys Gly Ala Glu Ile Thr Gly His Val Lys Asn Gly Thr
 85 90 95

Met Arg Ile Val Gly Pro Arg Thr Cys Arg Asn Met Trp Ser Gly Thr
 100 105 110

Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Leu Pro Ala
 115 120 125

Pro Asn Tyr Lys Phe Ala Leu Trp Arg Val Ser Ala Glu Glu Tyr Val
 130 135 140

Glu Ile Arg Arg Val Gly Asp Phe His Tyr Val Ser Gly Met Thr Thr

145	150	155	160
Asp Asn Leu Lys Cys Pro Cys Gln Ile Pro Ser Pro Glu Phe Phe Thr			
165	170	175	
Glu Leu Asp Gly Val Arg Leu His Arg Phe Ala Pro Pro Cys Lys Pro			
180	185	190	
Leu Leu Arg Glu Glu Val Ser Phe Arg Val Gly Leu His Glu Tyr Pro			
195	200	205	
Val Gly Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala Val Leu			
210	215	220	
Thr Ser Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Ala Ala Gly			
225	230	235	240
Arg Arg Leu Ala Arg Gly Ser Pro Pro Ser Met Ala Ser Ser Ser Ala			
245	250	255	
Ser Gln Leu Ser Ala Pro Ser Leu Lys Ala Thr Cys Thr Ala Asn His			
260	265	270	
Asp Ser Pro Asp Ala Glu Leu Ile Glu Ala Asn			
275	280		
 Hepatitis C virus			
<210> 101			
<211> 249			
<212> PRT			
<213> Hepatitis C virus			
 <400> 101			
Ser Leu Thr Val Thr Gln Leu Leu Arg Arg Leu His Gln Trp Ile Ser			
1	5	10	15
Ser Glu Cys Thr Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Ile Trp			
20	25	30	
Asp Trp Ile Cys Glu Val Leu Ser Asp Phe Lys Thr Trp Leu Lys Ala			
35	40	45	
Lys Leu Met Pro Gln Leu Pro Gly Ile Pro Phe Val Ser Cys Gln Arg			
50	55	60	
Gly Tyr Arg Gly Val Trp Arg Gly Asp Gly Ile Met His Thr Arg Cys			
65	70	75	80
His Cys Gly Ala Glu Ile Thr Gly His Val Lys Asn Gly Thr Met Arg			
85	90	95	
Ile Val Gly Pro Arg Thr Cys Arg Asn Met Trp Ser Gly Thr Phe Pro			
100	105	110	
Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro Leu Pro Ala Pro Asn			
115	120	125	
Tyr Lys Phe Ala Leu Trp Arg Val Ser Ala Glu Glu Tyr Val Glu Ile			
130	135	140	

Arg Arg Val Gly Asp Phe His Tyr Val Ser Gly Met Thr Thr Asp Asn
 145 150 155 160
 Leu Lys Cys Pro Cys Gln Ile Pro Ser Pro Glu Phe Phe Thr Glu Leu
 165 170 175
 Asp Gly Val Arg Leu His Arg Phe Ala Pro Pro Cys Lys Pro Leu Leu
 180 185 190
 Arg Glu Glu Val Ser Phe Arg Val Gly Leu His Glu Tyr Pro Val Gly
 195 200 205
 Ser Gln Leu Pro Cys Glu Pro Glu Pro Asp Val Ala Val Leu Thr Ser
 210 215 220
 Met Leu Thr Asp Pro Ser His Ile Thr Ala Glu Ala Ala Gly Arg Arg
 225 230 235 240
 Leu Ala Arg Gly Ser Pro Pro Ser Met
 245

G<210> 102
G<211> 85
G<212> PRT
G<213> Hepatitis C virus

H<400> 102
HThr Trp Leu Lys Ala Lys Leu Met Pro Gln Leu Pro Gly Ile Pro Phe
 1 5 10 15

HVal Ser Cys Gln Arg Gly Tyr Arg Gly Val Trp Arg Gly Asp Gly Ile
 20 25 30

G<210> 103
G<211> 94
G<212> PRT
G<213> Hepatitis C virus

G<400> 103
GGlu Ile Thr Gly His Val Lys Asn Gly Thr Met Arg Ile Val Gly Pro
 1 5 10 15

 Ser Gly Thr Phe Pro Ile Asn Ala Tyr Thr Thr Gly Pro Cys Thr Pro
 65 70 75 80

 Leu Pro Ala Pro Asn
 85

<210> 103
 <211> 94
 <212> PRT
 <213> Hepatitis C virus

 <400> 103
 Glu Ile Thr Gly His Val Lys Asn Gly Thr Met Arg Ile Val Gly Pro
 1 5 10 15

 Arg Thr Cys Arg Asn Met Trp Ser Gly Thr Phe Pro Ile Asn Ala Tyr
 20 25 30

Thr	Thr	Gly	Pro	Cys	Thr	Pro	Leu	Pro	Ala	Pro	Asn	Tyr	Lys	Phe	Ala
							35		40				45		
Leu	Trp	Arg	Val	Ser	Ala	Glu	Glu	Tyr	Val	Glu	Ile	Arg	Arg	Val	Gly
						50		55		60					
Asp	Phe	His	Tyr	Val	Ser	Gly	Met	Thr	Thr	Asp	Asn	Leu	Lys	Cys	Pro
						65		70		75		80			
Cys	Gln	Ile	Pro	Ser	Pro	Glu	Phe	Phe	Thr	Glu	Leu	Asp	Gly		
						85			90						

<210> 104

<211> 75

<212> PRT

<213> Hepatitis C virus

<400> 104

Ile	Glu	Ala	Asn	Leu	Leu	Trp	Arg	Gln	Glu	Met	Gly	Gly	Asn	Ile	Thr
1				5				10					15		

Arg	Val	Glu	Ser	Glu	Asn	Lys	Val	Val	Ile	Leu	Asp	Ser	Phe	Asp	Pro
							20		25		30				

Leu	Val	Ala	Glu	Glu	Asp	Glu	Arg	Glu	Val	Ser	Val	Pro	Ala	Glu	Ile
			35				40			45					

Leu	Arg	Lys	Ser	Arg	Arg	Phe	Ala	Arg	Ala	Leu	Pro	Val	Trp	Ala	Arg
	50					55			60						

Pro	Asp	Tyr	Asn	Pro	Pro	Leu	Val	Glu	Thr	Trp					
	65					70		75							

<210> 105

<211> 90

<212> PRT

<213> Hepatitis C virus

<400> 105

His	Gly	Cys	Pro	Leu	Pro	Pro	Pro	Arg	Ser	Pro	Pro	Val	Pro	Pro	Pro
1				5				10			15				

Arg	Lys	Lys	Arg	Thr	Val	Val	Leu	Thr	Glu	Ser	Thr	Leu	Ser	Thr	Ala
					20		25		30						

Leu	Ala	Glu	Leu	Ala	Thr	Lys	Ser	Phe	Gly	Ser	Ser	Ser	Thr	Ser	Gly
			35			40			45						

Ile	Thr	Gly	Asp	Asn	Thr	Thr	Ser	Ser	Glu	Pro	Ala	Pro	Ser	Gly	
	50						55		60						

Cys	Pro	Pro	Asp	Ser	Asp	Val	Glu	Ser	Tyr	Ser	Ser	Met	Pro	Pro	Leu
65						70		75		80					

Glu	Gly	Glu	Pro	Gly	Asp	Pro	Asp	Leu	Ser						
					85			90							

<210> 106
<211> 137
<212> PRT
<213> Hepatitis C virus

<400> 106
Ser Trp Thr Gly Ala Leu Val Thr Pro Cys Ala Ala Glu Glu Gln Lys
1 5 10 15
Leu Pro Ile Asn Ala Leu Ser Asn Ser Leu Leu Arg His His Asn Leu
20 25 30
Val Tyr Ser Thr Thr Ser Arg Ser Ala Cys Gln Arg Gln Lys Lys Val
35 40 45
Thr Phe Asp Arg Leu Gln Val Leu Asp Ser His Tyr Gln Asp Val Leu
50 55 60
Lys Glu Val Lys Ala Ala Ser Lys Val Lys Ala Asn Leu Leu Ser
65 70 75 80
Val Glu Glu Ala Cys Ser Leu Thr Pro Pro His Ser Ala Lys Ser Lys
85 90 95
Phe Gly Tyr Gly Ala Lys Asp Val Arg Cys His Ala Arg Lys Ala Val
100 105 110
Ala His Ile Asn Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Val Thr
115 120 125
Pro Ile Asp Thr Thr Ile Met Ala Lys
130 135

<210> 107
<211> 300
<212> PRT
<213> Hepatitis C virus

<400> 107
Ala Asn Leu Leu Ser Val Glu Glu Ala Cys Ser Leu Thr Pro Pro His
1 5 10 15
Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Cys His
20 25 30
Ala Arg Lys Ala Val Ala His Ile Asn Ser Val Trp Lys Asp Leu Leu
35 40 45
Glu Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Asn Glu
50 55 60
Val Phe Cys Val Gln Pro Glu Lys Gly Arg Lys Pro Ala Arg Leu
65 70 75 80
Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu
85 90 95

Tyr Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly Ser Ser Tyr
 100 105 110

Gly Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu Val Gln Ala
 115 120 125

Trp Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp Thr Arg Cys
 130 135 140

Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile
 145 150 155 160

Tyr Gln Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser
 165 170 175

Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly
 180 185 190

Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr
 195 200 205

Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys
 210 215 220

~~G~~Arg Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp
~~G~~225 230 235 240

~~H~~Leu Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser
~~H~~245 250 255

~~S~~Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro Pro Gly
~~S~~260 265 270

~~G~~Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser Cys Ser
~~G~~275 280 285

~~S~~Ser Asn Val Ser Val Ala His Asp Gly Ala Gly Lys
~~S~~290 295 300

<210> 108

<211> 199

<212> PRT

<213> Hepatitis C virus

<400> 108

Glu Glu Ala Cys Ser Leu Thr Pro Pro His Ser Ala Lys Ser Lys Phe
 1 5 10 15Gly Tyr Gly Ala Lys Asp Val Arg Cys His Ala Arg Lys Ala Val Ala
 20 25 30His Ile Asn Ser Val Trp Lys Asp Leu Leu Glu Asp Ser Val Thr Pro
 35 40 45Ile Asp Thr Thr Ile Met Ala Lys Asn Glu Val Phe Cys Val Gln Pro
 50 55 60Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu Ile Val Phe Pro Asp Leu
 65 70 75 80

Gly Val Arg Val Cys Glu Lys Met Ala Leu Tyr Asp Val Val Ser Lys
 85 90 95

Leu Pro Leu Ala Val Met Gly Ser Ser Tyr Gly Phe Gln Tyr Ser Pro
 100 105 110

Gly Gln Arg Val Glu Phe Leu Val Gln Ala Trp Lys Ser Lys Lys Thr
 115 120 125

Pro Met Gly Phe Ser Tyr Asp Thr Arg Cys Phe Asp Ser Thr Val Thr
 130 135 140

Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr Gln Cys Cys Asp Leu
 145 150 155 160

Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu Thr Glu Arg Leu Tyr
 165 170 175

Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu Asn Cys Gly Tyr Arg
 180 185 190

Arg Cys Arg Ala Ser Gly Val
 195

<210> 109

<211> 260

<212> PRT

<213> Hepatitis C virus

<400> 109

Leu Leu Glu Asp Ser Val Thr Pro Ile Asp Thr Thr Ile Met Ala Lys
 1 5 10 15

Asn Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala
 20 25 30

Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met
 35 40 45

Ala Leu Tyr Asp Val Val Ser Lys Leu Pro Leu Ala Val Met Gly Ser
 50 55 60

Ser Tyr Gly Phe Gln Tyr Ser Pro Gly Gln Arg Val Glu Phe Leu Val
 65 70 75 80

Gln Ala Trp Lys Ser Lys Lys Thr Pro Met Gly Phe Ser Tyr Asp Thr
 85 90 95

Arg Cys Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu
 100 105 110

Ala Ile Tyr Gln Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile
 115 120 125

Lys Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser
 130 135 140

Arg Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu

145	150	155	160
Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala			
165	170	175	
Ala Cys Arg Ala Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly			
180	185	190	
Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala			
195	200	205	
Ala Ser Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro			
210	215	220	
Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser			
225	230	235	240
Cys Ser Ser Asn Val Ser Val Ala His Asp Gly Ala Gly Lys Arg Val			
245	250	255	
Tyr Tyr Leu Thr			
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<400> 111
 Val Ser Val Ala His Asp Gly Ala Gly Lys Arg Val Tyr Tyr Leu Thr
 1 5 10 15
 Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp Glu Thr Ala Arg
 20 25 30
 His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile Ile Met Phe Ala Pro
 35 40 45
 Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe Phe Ser Val Leu
 50 55 60
 Ile Ala Arg Asp Gln Leu Glu Gln Ala Leu Asn Cys Glu Ile Tyr Gly
 65 70 75 80
 Ala Cys Tyr Ser Ile Glu Pro Leu Asp
 85

~~Q~~<210> 112
~~Q~~<211> 73
~~Q~~<212> PRT
~~Q~~<213> Hepatitis C virus
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~~Q~~<400> 112
 Leu His Gly Leu Ser Ala Phe Ser Leu His Ser Tyr Ser Pro Gly Glu
 1 5 10 15
 Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu Gly Val Pro Pro Leu
 20 25 30
 Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg Ala Arg Leu Leu Ser
 35 40 45
 Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr Leu Phe Asn Trp Ala
 50 55 60
 Val Arg Thr Lys Leu Lys Leu Thr Pro
 65 70

<210> 113
<211> 63
<212> PRT
<213> Hepatitis C virus
<400> 113
 Ser Pro Gly Glu Ile Asn Arg Val Ala Ala Cys Leu Arg Lys Leu Gly
 1 5 10 15
 Val Pro Pro Leu Arg Ala Trp Arg His Arg Ala Arg Ser Val Arg Ala
 20 25 30
 Arg Leu Leu Ser Arg Gly Gly Arg Ala Ala Ile Cys Gly Lys Tyr Leu
 35 40 45
 Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Ala

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<210> 114
<211> 310
<212> DNA
<213> Hepatitis C virus

<400> 114
tgcttgcgag tgccccggga ggtctcgtag accgtgcacc atgagcacga atcctaaacc 60
tcaaagaaaa accaaacgta acaccaaccc tcgcccacag gacgtcaagt tcccgggtgg 120
cggtcagatc gttgggtggag ttacttgtt gccgcgcagg ggccctagat tgggtgtgcg 180
cgcgacgagg aagacttccg agcggtcga acctcgaggt agacgtcagc ctatccccaa 240
gceacgtcgg cccgagggca ggacctgggc tcagcccggg tacccttggc ccctctatgg 300
caatgaggt 310

<210> 115
<211> 339
<212> DNA
<213> Hepatitis C virus

Q <400> 115
atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccc tcgcccacag 60
gacgtcaagt tcccgggtgg cggtcagatc gttgggtggag ttacttgtt gccgcgcagg 120
ggccctagat tgggtgtgcg cgcgacgagg aagacttccg agcggtcga acctcgaggt 180
agacgtcagc ctatccccaa ggcacgtcgg cccgagggca ggacctgggc tcagcccggg 240
tacccttggc ccctctatgg caatgaggt tgggggtggc cggatggct cctgtctccc 300
cgtggctctc ggcctagctg gggccccaca gaccccccgg 339

Q <210> 116
Q <211> 345
Q <212> DNA
Q <213> Hepatitis C virus

Q <400> 116
tgccatcctg cacactccgg ggtgtgtccc ttgcgttcgc gagggtaacg cctcgaggtg 60
ttgggtggcg gtgaccccca cggtgccac cagggacggc aaactcccc caacgcagct 120
tcgacgtcat atcgatctgc ttgtcgggag cgccaccctc tgctcggccc tctacgtggg 180
ggacctgtgc gggctgtct ttcttgttgg tcaactgttt accttctctc ccaggcgcca 240
ctggacgacg caagactgca attgttctat ctatccccgc catataacgg gtcatcgcat 300
ggcatggat atgatgatga actggcccc tacggcagcg ttgg 345

<210> 117
<211> 276
<212> DNA
<213> Hepatitis C virus

<400> 117
cggcggtcgac gcggaaaccc acgtcaccgg gggaaatgcc ggccgcacca cggctgggct 60
tgggtgtctc ttacaccag gcgccaagca gaacatccaa ctgatcaaca ccaacggcag 120
ttggcacatc aatagcacgg cttgaattg caatgaaagc cttAACACCG gctggtagc 180
agggtcttc tatcaacaca aattcaactc ttcaggctgt cctgagaggt tggccagctg 240
ccgacgcctt accgattttg cccagggctg gggtcc 276

<210> 118
<211> 531

<212> DNA
<213> Hepatitis C virus

<400> 118
ctggggtcct atcagttatg ccaacgaaag cggcctcgac gaacgcctt actgctggca 60
ctaccctcca agaccttgcg gcattgtgcc cgcaaagagc gtgtgtggcc cggtatattg 120
cttcaactccc agcccccgtgg tggtggaaac gaccgacagg tcgggcgcgc ctacctacag 180
ctggggtgca aatgatacgg atgtcttcgt ccttaacaac accaggccac cgctggccaa 240
ttggttcgtt tgtacacttgc tgaactcaac tggattcacc aaagtgtgcg gagcgcccc 300
ttgtgtcatc ggaggggtgg gcaacaacac cttgctctgc cccactgatt gcttccgcaa 360
acatccggaa gccacatact ctcggtgccg ctccggtccc tggattacac ccaggtgcat 420
ggtcgactac cctgtatagcc ttggcacta tccttgcatt atcaattaca ccatattcaa 480
agtcaaggatg tacgtggag gggtcgagca caggctggaa gcggcctgca a 531

<210> 119
<211> 289
<212> DNA
<213> Hepatitis C virus

<400> 119
ctggcactac cctccaagac cttgtggcat tgtgcccgc aagagcgtgt gtggcccggt 60
atattgttc actcccgcc ccgtgggtt gggAACGACC gacagggtcg ggcgcctac 120
ctacagctgg ggtgaaatgt atacggatgt cttcgccctt aacaacacca ggcacccgct 180
gggcaatttgg ttcggttgc cctggatgaa ctcaacttgc ttccaccaag tgtgcggagc 240
ggccccccttgtt gtcatcgag ggggtggcaa caacacccctt ctctgcccc 289

<210> 120
<211> 836
<212> DNA
<213> Hepatitis C virus

<400> 120
ggccgcgtgcg gtgacatcat caacggctt cccgtctctg cccgttagggg ccaggagata 60
ctgcttgggc cagccgacgg aatggtctcc aagggggtgg ggttgcgtgc gcccatcact 120
cgctacgccc agcagacgag aggccctcta ggggtgtataa tcaccaggct gactggccgg 180
gacaaaaaacc aagtggaggg tgaggtccag atcgtgtcaa ctgttaccca aaccttccctg 240
caacgtgca tcaatgggt atgctggact gtctaccacg gggccggaaac gaggaccatc 300
gcatcaccca agggctctgt catccagatg tataccaatg tggaccaaga cttgtggc 360
tggcccgctc ctcaagggtt ccgttcatgtt acaccctgtt cctggggctc ctggacctt 420
tacctgttca cgaggcacgc cgatgttcatc cccgtgcgc ggcgaggtga tagcaggggt 480
gcctgttcc cgcggccgat catttccatc ttgaaaggct cctcgggggg tccgctgtt 540
tgcccccggg gacacggcgat gggcttattt agggccggg tttgcacccg tggagtggct 600
aaagcggtgg actttatccc tttttttttt tttttttttt tttttttttt tttttttttt 660
acggacaact cctctccacc agcagtgcgc cagagcttcc aggtggccca cctgcattgt 720
cccaccggca gcggtaagag caccaagggtc ccggctgcgt acgcagccca ggctacaag 780
gtgttggtgc tcaacccttc ttgttgcata acgttggctt ttgttgcata catgtc 836

<210> 121
<211> 475
<212> DNA
<213> Hepatitis C virus

<400> 121
gcggccggcga ggtgatagca ggggttagcct gctttcgccc cggcccattt cctacttggaa 60
aggttcctcg gggggtccgc ttgttgcctt cgcgggacac gccgtgggcc tattcaggc 120
cgcgggtgtgc acccgtggag tggctaaagc ggtggacttt atccctgtgg agaacctagg 180
gacaaccatg agatccccgg ttttgcata caacttccctt ccaccagcag tgcccccagag 240
cttccaggtt gcccacccatc atgttccac cggcagcggt aagagcacca aggtccccggc 300

tgcgtacgca gcccagggtc acaagggttt ggtgctcaac ccctctgtt ctgcaacgct 360
 gggcttttgt gcttacatgt ccaaggccca tggggtttat cctaataatca ggaccgggg 420
 gagaacaatt accactggca gccccatcac gtactccacc tacggcaagt tcctt 475

<210> 122
 <211> 790
 <212> DNA
 <213> Hepatitis C virus

<400> 122
 tgatagcagg ggtagcctgc tttcgccccg gcccatttcc tacttgaag gctcctcggg 60
 gggccgcgtg ttgtgccccg cgggacacgc cgtggcccta ttcaggccg cggtgtgcac 120
 ccgtggagtg gctaaagccg tggactttat ccctgtggag aacctaggaa caaccatgag 180
 atccccggtg ttcacggaca actcctctcc accagcagtg ccccagagct tccaggtggc 240
 ccacctgtat gctcccaccg gcagcggtaa gagcaccaag gtcccgctg cgtacgcagc 300
 ccagggctac aagggtttgg tgctcaaccc ctctgttgct gcaacgctgg gcttgggtgc 360
 ttacatgtcc aaggcccattt ggggtgatcc taatatcagg accggggtaa gaacaattac 420
 cactggcagc cccatcacgt actccaccta cgccaagttc cttgccgacg ggggtgctc 480
 aggaggtgt tatgacataa taattttgtga cgagtggccac tccacggatg ccacatccat 540
 cttgggcatc ggcactgtcc ttgaccaaggc agagactgcg ggggcgagac tggttgggtgc 600
 cgccactgtt acccctccgg gctccgtcac tgggtccat cctaacatcg aggaggttg 660
 tctgtccacc accggagaga tcccccatttta cgccaaggct atccccctcg aggtgatcaa 720
 ggggggaaga catotcatct tctgccactc aaagaagaag tgcgacgagc tcgcccggaa 780
 gctggtcgca 790

<210> 123
 <211> 583
 <212> DNA
 <213> Hepatitis C virus

<400> 123
 ggacaactcc tctccaccag cagtggccca gagttccag gtggccacc tgcattgtcc 60
 caccggcagc ggttaagagca ccaagggtcc ggctgcgtac gcagccagg gctacaagg 120
 gttgggtgtc aaccctctg ttgctgcaac gctgggttt ggtgcttaca tgtccaaggc 180
 ccatgggggtt gatcctaata tcaggaccgg ggtgagaaca attaccactg gcagccccat 240
 cacgtactcc acctacggca agttccttcg cgacggcggg tgctcaggag gtgttatga 300
 cataataatt tgtgacgatg gcaactccac ggatgccaca tccatcttgg gcatcgac 360
 tgccttgcac caagcagaga ctgcgggggc gagactgggt gtgctgcca ctgctacccc 420
 tccgggctcc gtcactgtgt cccatcttaa catcgaggag gttgctctgt ccaccaccgg 480
 agagatcccc tttagccggca aggctatccc cctcgagggtg atcaaggggg gaagacatct 540
 catttctgc cactcaaaga agaagtgcga cgagctcgcc gcg 583

<210> 124
 <211> 617
 <212> DNA
 <213> Hepatitis C virus

<400> 124
 ctttgcgcac ggcgggtgtc caggagggtgc ttatgacata ataattttgt acgagtgcca 60
 ctccacggat gccacatcca tcttggcat cggactgtc cttgaccaag cagagactgc 120
 gggggcggaga ctgggtgtgc tcgcccactgc taccctccg ggctccgtca ctgtgtccca 180
 tcctaacaatc gaggagggtt ctctgtccac caccggagag atcccccttt acgcaaggc 240
 tatccccctc gaggtgatca aggggggaag acatctcatc ttctgcaact caaagaagaa 300
 gtgcgacgag ctcggccgcga agctggtcgc attggggatc aatgccgtgg cctactaccg 360
 cggcttgcac gtgtctgtca tcccggaccag cggcgatgtt gtgtctgtcg cgaccgatgc 420
 tctcatgact ggctttaccg gcgacttcga ctctgtgata gactgcaaca cgtgtgtcac 480
 tcagacagtc gatttcagcc ttgaccctac ctttaccatt gagacaacca cgctccccca 540
 ggatgctgtc tccaggactc aacgcccgggg caggactggc agggggaaagc caggcatcta 600

tagatttgtg gcaccgg

617

<210> 125
<211> 559
<212> DNA
<213> Hepatitis C virus

<400> 125
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ggggggcgaga ctgggtgtc tcgcaactgc taccctccg ggctccgtca ctgtgtccca 120
tcctaacaatc gaggagggtg ctctgtccac caccggagag atcccccttt acggcaaggc 180
tatcccccttc gaggtgatca agggggaaag acatctcatc ttctgccact caaagaagaa 240
gtgcgacgag ctcggccgca agctgggtcgc attgggcatc aatgccgtgg cctactaccg 300
cggtgttgcac gtgtctgtca tcccggaccag cggcgatgtt gtcgtcggt cgaccgatgc 360
tctcatgact ggctttaccg gcgacttgcg ctctgtgata gactgcaaca cgtgtgtcac 420
tcagacagtc gatttcagcc ttgaccctac ctttaccatt gagacaacca cgctccccca 480
ggatgctgtc tccaggactc aacggccggg caggactggc agggggaaagc caggcatcta 540
tagatttgtg gcaccgggg 559

<210> 126
<211> 475
<212> DNA
<213> Hepatitis C virus

<400> 126
tgtgatagac tgcaaacacgt gtgtcaactca gacagtcat ttcagccttg accctacatt 60
taccatttag acaaccacgc tcccccagga tgctgtctcc aggactcaac gccccggcag 120
gactggcagg gggaaagccag gcatctatag atttggca ccgggggagc gcccctccgg 180
catgttcgac tgcgtccgtcc tctgtgagtg ctatgacgcg ggctgtgctt ggtatgagct 240
cacggccccc gagactacag tttaggctacg agcgtacatg aacaccccg ggcttcccg 300
gtgccaggac catcttgaat ttggggaggg cgtctttacg ggcctcaactc atatacatgc 360
ccactttta tcccagacaa agcagagtgg ggagaactt ctttacctgg tagcgtacca 420
ggccaccgtg tgcgttaggg ctcaagcccc tccccatcg tggaccaga tgtgg 475

<210> 127
<211> 390
<212> DNA
<213> Hepatitis C virus

<400> 127
tagatttgtg gcaccggggg agcgccccctc cggcatgttc gactcgccg tcctctgtga 60
gtgctatgac gcgggctgtg cttggatata gctcacgccc gcccggacta cagttaggct 120
acgagcgtac atgaacaccc cggggcttcc cgtgtgccag gaccatctt aattttggaa 180
gggcgtctt acgggcctca ctcatataga tggccacttt ttatccaga caaaggcag 240
tggggagaac ttcccttacc tggtagcgta ccaagccacc gtgtgcgtc gggctcaagc 300
ccctccccca tgcgtggacc agatgtggaa gtgttgcgtc cgccttaaac ccaccctcca 360
tgggccaaca cccctgtat acagactgg 390

<210> 128
<211> 155
<212> DNA
<213> Hepatitis C virus

<400> 128
acgagcacct ggggtgctcggt tggcgccgtc ctggctgctc tggccgcgtt ttgcctgtca 60
acaggcgtcg tggtcatagt gggcaggatc gtcttgcgtt ggaagccggc aattataacct 120
gacagggagg ttctctacca ggagttcgat gagat 155

<210> 129
<211> 56
<212> DNA
<213> Hepatitis C virus

<400> 129
ggctgctctg gccgcgtatt gcctgtcaac aggctgcgtg gtcatagtg ggagga 56

<210> 130
<211> 625
<212> DNA
<213> Hepatitis C virus

<400> 130
ttttacagtcgcgttccac gcccactaac cactggccaa accctcccttc tcaacatatt 60
gggggggggtgg gtggctgcgc agctcgccgc ccccggtgcc gctactgcct ttgtgggtgc 120
tggccttagt ggcgcggcca tcggcagcgt tggactgggg aaggccctcg tggacattct 180
tgcagggtat ggcgcggggcg tggcgggagc tctttagca ttcaagatca tgagcggta 240
gttccccctcc acggaggacc tggtaatct gctgcccgc atcctctcgc ctggagccct 300
tgttagtcgtt gtggctgcgtt cagcaatact ggcgcggcac gttggcccg gcgagggggc 360
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~~G~~cactacgtt ccggagagcg atgcagccgc ccgcgttact gccataactca gcagcctcac 480
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~~G~~ctcccggttcc tggctaaggg acatctggga ctggatatgc gaggtgctga gcgactttaa 600
~~G~~acactggctg aaagccaagc tcatg 625

<210> 131
<211> 623
<212> DNA
<213> Hepatitis C virus

<400> 131
tactgcctt gtgggtgttgcgtt gcttagctgg cgccgcacatc ggcagcggtt gactggggaa 60
~~G~~gtcctcggtt gacattcttgcgtt cagggtatgg cgccggcggtt gcccggagctt ttgttagcatt 120
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~~G~~aaccatgtt tccccccacgc actacgttgcg ggagagcgat gcaaggccccc gcgttacttcg 360
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~~G~~cactcgctgcgtt cactgtggat ctgttgcgtt 623

<210> 132
<211> 678
<212> DNA
<213> Hepatitis C virus

<400> 132
cctcgtggac attcttgcgtt ggtatggcgcc gggcgtggcg ggagcttttgcgtt tagcattcaa 60
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gtgtaccact ccatgctccg gttcctggct aaggcacatc tgggactgga tatgcgaggt 420
 gctgagcgac tttaagacct ggctgaaagc caagctcatg ccacaactgc ctgggattcc 480
 ctttgtgtcc tgccagcgcg ggtatagggg ggtctggcga ggagacggca ttatgcacac 540
 tcgctgccac tgtggagctg agatcactgg acatgtcaaa aacgggacga tgaggatcgt 600
 cggtccttagg acctgcagga acatgtggag tggacgttc cccattaacg cctacaccac 660
 gggcccctgt actccccct 678

<210> 133
 <211> 436
 <212> DNA
 <213> Hepatitis C virus

<400> 133
 tgcagggtat ggcgcgggac tcttgtaca ttcaagatca tgagcggtga 60
 ggtcccccctcc acggaggacc tggtaatct gctgcccgc atccctctcg 120
 tggtagtcgt gtggctcg 180
 cagcaatact gcgcggcac gttggcccg gcgagggggc 180
 agtcaatgg atgaaccggc taatagcct cgctcccg 240
 gggaaaccatg tttccccac
 gcaactacgtg cccgagagcg atgcagccgc cccggtcaact gccataactca gcagcctcac 300
 tgtaaccagg ctcctgaggg 360
 gactgcatca gtgataagc tcggagtgta ccactccatg 360
 ctccggttcc tggctaagg 420
 acatctggg 436
 gacctggctg aaaggc

D
B<210> 134
B<211> 164
D<212> DNA
E<213> Hepatitis C virus

<400> 134
 agcccttgta gtcgtgtgg tctgcgcgc aatactgcgc cggcacgtt 60
 gggggcagtg caatggatga accggctaat agccttcg 120
 ccccacgcac tacgtgcgg 164
 agagcgatgc agccgcgcgtc gtca

B
B<210> 135
D<211> 496
G<212> DNA
E<213> Hepatitis C virus

<400> 135
 cgcctcccg 60
 ggaaaccatg tttccccac gcactacgtg cccgagagcg atgcagccgc 120
 cccggtcaact gccatactca gcagcctcac tctaacc 180
 gttaaaccatg ctccctgaggg 240
 tggataagc tcggagtgt 300
 ccactccatg ctccgggtcc tggctaagg 360
 ctggatatgc gaggtgctg 420
 ggcactttaa gacctggctg 480
 tcatacc 496
 actgcctggg attccctttg tgcctgc 496
 ggcgggtat aggggggtct ggcaggaga
 cggcattatg cacactcgct gccactgtgg agctgagatc actggacatg tcaaaaacgg
 gacgtgagg atcgtcggtc ctggacctg caggaacatg tggagtgg 420
 taacgcctac accacggcc cctgtactcc cttccgtcg 480
 gtggagggtg tctgca

<210> 136
 <211> 926
 <212> DNA
 <213> Hepatitis C virus

<400> 136
 tacgtgcgg 60
 agagcgatgc agccgcgcgtc gtcactgcca tactcagcag cctcactgt 120
 acccagctcc tgaggcgact gcatcagtgg ataagctgg agtgtaccac tccatgctcc 180
 gttccctggc taaggacat ctggactgg atatgcgagg tgctgagcga ctttaagacc

tggctgaaag ccaagctcat gccacaactg cctgggattc cctttgtgtc ctgccagcgc 240
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 gagatcactg gacatgtcaa aaacgggacg atgaggatcg tcggtcttag gacctgcagg 360
 aacatgtgga gtgggacgtt ccccattaac gcctacacca cggggccctg tactcccc 420
 cctgcgccga actataagtt cgcgctgtgg aggtgtctg cagaggaata cgtggagata 480
 aggcggttgg gggacttcca ctacgtatcg ggtatgacta ctgacaatct taaatgccc 540
 tgccagatcc catcgccccga attttcaca gaattggacg gggtgccct acacaggitt 600
 gcgcccccgtt gcaagccctt gctgcgggag gaggtatcat tcagagtagg actccacgag 660
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 atgctcactg atccctccca tataacagca gaggccggcc ggagaagggtt ggcgagaggg 780
 tcaccccccctt ctatggccag ctccctcgct agccagctgt ccgctccatc tctcaaggca 840
 acttgcaccc ccaaccatga ctccccgtac gccgagctca tagaggctaa cctccctgtgg 900
 aggaggaga tggcgccaa catcac 926

<210> 137
<211> 850
<212> DNA
<213> Hepatitis C virus

<400> 137
 actcagcagc ctcactgtaa cccagctcct gaggcgactg catcagtggta taagctcgga 60
 gtgttaccact ccatgctccg gttcctggct aaggacatc tggacttggta tatgcgaggt 120
 gctgagcgcac tttaagacct ggctgaaagc caagctcatg ccacaactgc ctgggattcc 180
 ctttgtgtcc tgccagcgcg ggtataggggg ggtctggcga ggagacggca ttatgcacac 240
 tcgctgcccac tgtggagctg agatcactgg acatgtcaaa aacgggacga tgaggatcgt 300
 cggtccttagg acctgcagga acatgtggag tggacgttc cccattaacg cctacaccac 360
 gggccctgtt actcccttc ctgcgcgaa ctataagtt gcgcgttggta ggggtctgc 420
 gaggaataac gtggagataa ggcgggtggg ggacttccac tacgtatcgg gtatgactac 480
 tgacaatctt aaatgcccgtt gccagatccc atcggccgaa tttttcacag aattggacgg 540
 ggtgcgccta cacaggtttg cgcggccctt ccaagcccttgc ctgcgggagg aggtatcatt 600
 cagagtagga ctccacgagt acccggtggg gtcgcaattt ccttgcgagc ccgaaccgg 660
 cgtagccgtt ttgacgttca tgctactga tccctcccat ataacagcag aggccggccgg 720
 gagaagggtt gcgagagggtt caccggccctt tatggccagc tccctcgctt gccagctgtc 780
 cgctccatctt ctcaaggccaa cttgcaccgc caaccatgac tccctgtacg ccgagctcat 840
 gagaggctaac 850

<210> 138
<211> 749
<212> DNA
<213> Hepatitis C virus

<400> 138
 cagcctcact gtaaccgc tcctgaggcg actgcatacg tggataagct cggagtgtac 60
 cactccatgc tccgggttccct ggctaaaggga catctggac tggatatgcg aggtgcttag 120
 cgactttaag acctggctga aagccaagct catgccacaa ctgcctggta ttccctttgt 180
 gtcctgccaag cgcgggtata ggggggtctg gcgaggagac ggcattatgc acactcgctg 240
 ccactgtggta gctgagatca ctggacatgtt caaaaacggg acgtatgagga tcgtcggtcc 300
 taggacctgc aggaacatgtt ggagtggac gttccccattt aacgccttaca ccacggggccc 360
 ctgtactccc ttccctgcgc cgaactataaa gttcgctgtc tggagggtgt ctgcagagga 420
 atacgtggag ataaggccggg tggggactt ccactacgtt tcgggtatgtt ctactgacaa 480
 tcttaaatgc ccgtgccaga tcccatcgcc cgaatttttc acagaattttt acgggggtgc 540
 cctacacagg tttgcggccc cttgcaaggcc tttgtcgccg gaggaggtt cattcagagt 600
 agactccac gacttcccg tggggtcgca attaccttgc gagcccaac cggacgtac 660
 cgtgttgcacg tccatgttca ctgatccctt ccatataaca gcagaggccg ccgggagaag 720
 gttggcgaga gggtccacccc cttctatgg 749

<210> 139
<211> 257

<212> DNA
<213> Hepatitis C virus

<400> 139

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gacctggctg aaagccaagc tcatgccaca actgcctggg attcccttg tgtcctgcc 60
gcgcgggtat aggggggtct ggcgaggaga cggcattatg cacactcgct gccactgtgg 120
agctgagatc actggacatg tcaaaaacgg gacgatgagg atcgtcggtc cttaggacctg 180
caggaacatg tggagtgggta cgttccccat taacgcctac accacggcc cctgtactcc 240
ccttcctgcg ccgaact 257
```

<210> 140

<211> 285

<212> DNA

<213> Hepatitis C virus

<400> 140

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tgagatcaact ggacatgtca aaaacgggac gatgaggatc gtcggtccta ggacctgcag 60
gaacatgtgg agtggacgt tccccatcaa cgcc tacacc accggggccct gtactcccct 120
tcctgcgcgc aactataagt tcgcgcgtgt gagggtgtct gcagaggaat acgtggagat 180
aaggcgggtg gggacttcc actacgtatc gggatgact actgacaatc taaaatgccc 240
gtgccagatc ccatgc(cc) aattttcac agaattggac gggg 285
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0

0 <210> 141

0 <211> 228

0 <212> DNA

0 <213> Hepatitis C virus

0 <400> 141

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catagaggct aacccctgt ggaggcagga gatgggcggc aacatcacca gggttgagtc 60
agagaacaaa gtggtgattc tggactcctt cgatccgctt gtggcagagg aggatgagcg 120
ggaggtctcc gtacctgcag aaattctgcg gaagtctcg agattcggccc gggccctgcc 180
cgtctggcg cggccggact acaacccccc gctagtagag acgtggaa 228
```

0 <210> 142

0 <211> 273

0 <212> DNA

0 <213> Hepatitis C virus

<400> 142

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ccatggctgc cgcctaccac ctccacggtc ccctccctgtg cctccgcctc gaaaaaagcg 60
tacgggtggc ctcaccgaat caaccctatc tactgcctt gccgagctt ccacccaaag 120
ttttggcagc tcctcaactt cccgcattac gggcacaat acgacaacat cctctgagcc 180
cgccccctct ggctgcccccc cccactccga cgtttagtcc tattttcca tgccccccct 240
ggagggggag cctggggatc cggatctcag cga 273
```

<210> 143

<211> 412

<212> DNA

<213> Hepatitis C virus

<400> 143

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ttcctggaca ggcgcactcg tcacccctgt cgctgcggaa gaacaaaaac tgcccatcaa 60
cgcaactgagc aactcggtgc tacgcccata caatctggtg tattccacca cttcacgcag 120
tgcttgccaa aggcaagaaga aagtacatt tgacagactg caagttctgg acagccatta 180
ccaggacgtg ctcaaggagg tcaaaggcagc ggcgtcaaaa gtgaaggcta acttgctatc 240
cgttagaggaa gcttgcagcc tgacgcccccc acattcagcc aaatccaatg ttggctatgg 300
ggcaaaagac gtccgttgcc atgcccagaaa ggccgtagcc cacatcaact ccgtgtggaa 360
```

agaccttctg gaagacagtg taacaccaat agacactacc atcatggcca ag 412

<210> 144

<211> 903

<212> DNA

<213> Hepatitis C virus

<400> 144

gcctaacttg ctatccgtag aggaagcttg cagcctgacg cccccacatt cagccaaatc 60
 caagtttggc tatggggcaa aagacgtccg ttgcacatgcc agaaaaggccg tagcccacat 120
 caactccgtg tggaaagacc ttcttggaga cagttaaca ccaatagaca ctaccatcat 180
 ggccaagaac gaggtttct gcgttcagcc tgagaagggg ggtcgtaagc cagctcgct 240
 catcggttcc cccgacctgg gcgtgcgcgt gtgcgagaag atggccctgt acgacgttgt 300
 tagcaagctc cccctggccg tgatgggaag ctccatcgga ttccaataact caccaggaca 360
 gcggttggaa ttccctcgta aagcggtggaa gtccaaagaag accccgatgg ggttctcgta 420
 tgataccgcg tggggact ccacagtac tgagagcgc acatcgatcc aggaggcaat 480
 ttaccaatgt tggacacctgg acccccaacgc cccgcgtggcc atcaagtccc tcactgagag 540
 gcttatgtt gggggccctc ttaccaatc aaggggggaa aactgcgcgt accgcagggt 600
 cccgcgcgagc ggcgtactga caacttagctg tggtaacacc ctcacttgct acatcaaggc 660
 cccggcagcc tggcgagccg cagggctcca ggactgcacc atgctcggt gtggcgacga 720
 cttagtcgtt atctgtgaaa gtgcgggggt ccaggaggac gcggcgagcc tgagagcctt 780
 cacggaggct atgaccaggat ctccgcctt ccccggggac ccccccacaac cagaatacga 840
 ctggagctt ataacatcat gtcctccaa cgtgtcagtc gcccacgacg ggcgtggaaa 900
 gag 903

<210> 145

<211> 600

<212> DNA

<213> Hepatitis C virus

<400> 145

agaggaagct tgcagccctga cgcccccaca ttcaagccaaa tccaaatggggc 60
 aaaagacgtc cggttccatg ccagaaaggc cgtagccac atcaactccg tggaaaga 120
 cttctggaa gacagtgtaa caccaataga cactaccatc atggcaaga acgagggttt 180
 tgcgttcag cctgagaagg ggggtcgtaa gccagctcg ttcacatcggt tcccccac 240
 ggcgtgcgc gtgtgcgaga agatggccct gtacgacgtg gtttagcaagc tccccctggc 300
 cgtatggga agctccatcg gattccaata ctcaccagga cagcgggtt aattcctcg 360
 gcaagcgtgg aagtccaaga agaccccgtt ggggttctcg tatgataacc gctgtttga 420
 ctccacagtc actgagagcgc acatccgtac ggaggaggca atttaccaat gtttgac 480
 ggaccccaa gcccgcgtgg ccatcaagtc ctcacttgag aggctttatg ttggggccc 540
 tcttaccaat tcaagggggg aaaactgcgg ctaccgcagg tgccgcgcga gcggcgact 600

<210> 146

<211> 781

<212> DNA

<213> Hepatitis C virus

<400> 146

cttctggaa gacagtgtaa caccaataga cactaccatc atggcaaga acgagggttt 60
 tgcgttcag cctgagaagg ggggtcgtaa gccagctcg ttcacatcggt tcccccac 120
 ggcgtgcgc gtgtgcgaga agatggccct gtacgacgtg gtttagcaagc tccccctggc 180
 cgtatggga agctccatcg gattccaata ctcaccagga cagcgggtt aattcctcg 240
 gcaagcgtgg aagtccaaga agaccccgtt ggggttctcg tatgataacc gctgtttga 300
 ctccacagtc actgagagcgc acatccgtac ggaggaggca atttaccaat gtttgac 360
 ggaccccaa gcccgcgtgg ccatcaagtc ctcacttgag aggctttatg ttggggccc 420
 tcttaccaat tcaagggggg aaaactgcgg ctaccgcagg tgccgcgcga gcggcgact 480
 gacaactago tggtaaca ccctcacttg ctacatcaag gcccggggcag ctcgtcgac 540
 cgcagggtctc caggactgca ccatgcgtgt gtgtggcgcac gacttagtgc ttatctgtga 600

aagtgcgggg gtccaggagg acgcggcgag cctgagagcc ttacggagg ctatgaccag 660
 gtactccccc cccccccgggg accccccaca accagaatac gacttggagc ttataacatc 720
 atgctcctcc aacgtgtcag tcgcccacga cggcgctgga aagagggtct actaccttac 780
 c 781

<210> 147
 <211> 382
 <212> DNA
 <213> Hepatitis C virus

<400> 147
 cgttatctgt gaaagtgcgg gggccagga ggacgcggcg agcctgagag cttcacgga 60
 ggcttatgacc aggtactccg cccccccccc ggacccccc caaccagaat acgacttgg 120
 gcttataaca tcatgtctt ccaacgtgtc agtcgcccac gacggcgctg gaaagagggt 180
 ctactaccc acccgtgacc ctacaacccc cctcgcgaga gccgcgtggg agacagcaag 240
 acacactcca gtcaattccct ggctaggcaa cataatcatg tttgccccca cactgtggc 300
 gaggatgata ctgatgaccc atttcttag cgtctcata gccaggatc agcttgaaca 360
 ggctcttaac tgtgagatct ac 382

<210> 148
 <211> 268
 <212> DNA
 <213> Hepatitis C virus

<400> 148
 cgtgtcagtc gcccacgacg gcgcgtggaaa gagggtctac taccttaccc gtgaccctac 60
 aaaaaaaaaa gcgagagccg cgtgggagac agcaagacac actccagtc attcctggct 120
 aggcaacata atcatgtttt ccccccacact gtggcgagg atgatactga tgacccattt 180
 ctttagcgtc ctcatagcca gggatcagct tgaacaggct cttaactgtg agatctacgg 240
 agcctgctac tccatagaac cactggat 268

<210> 149
 <211> 222
 <212> DNA
 <213> Hepatitis C virus

<400> 149
 actccatggc ctcagcgcat tttcactcca cagttactct ccaggtgaaa tcaatagggt 60
 ggccgcgtgc ctcagaaaac ttggggtccc gcccggcgca gcttggagac accggggcccg 120
 gagcgtccgc gctaggcttc tgcagagg aggcaaggct gccatatgtg gcaagtacct 180
 cttcaactgg gcaatggaa caaagctcaa actcactcca at 222

<210> 150
 <211> 192
 <212> DNA
 <213> Hepatitis C virus

<400> 150
 ctctccaggt gaaatcaata gggtggccgc atgcctcaga aaacttgggg tcccgccctt 60
 gcgagcttgg agacaccggg cccggagcgt ccgcgcgttgg cttctgttcca gaggaggcag 120
 ggctgccata tgcggcaagt acctcttcaa ctggcagta agaacaaggc tcaaactcac 180
 tccaatagcg gc 192

<210> 151
 <211> 10
 <212> DNA

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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: linker
      sequence

<400> 151
gggccacgaa                                         10

<210> 152
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: linker
      sequence

<400> 152
ttcgtggccc ctg                                         13

<210> 153
<211> 138
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: pP6 vector
      sequence

<400> 153
ctagccatgg ccgcaggggc cgccggccgca ctagtgggga tccttaatta aagggccact 60
ggggcccccc gtaccggcggt ccccgccgccc ggcgtgatca cccctaggaa ttaatttccc 120
ggtgaccccg ggggagct                                         138

<210> 154
<211> 128
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: pB5 vector
      sequence

<400> 154
catggccgca ggggccgcgg ccgcactagt ggggatcctt aattaaaggg ccactggggc 60
ccccccggcggt ccccgccgccc ggcgtgatca cccctaggaa ttaatttccc ggtgaccccg 120
ggggagct                                         128

<210> 155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

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<400> 155
gcgtttggaa tcactacagg

20

<210> 156
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 156
cacgatgcac gttgaagtg

19